Statewide Perinatal Advisory Committee
Washington State Perinatal Level of Care (LOC) Guidelines
February 2001 Revision

This document was initially developed in 1988 to provide guidelines to help Washington State hospitals with obstetric and newborn care services assess the type of patients best suited to their facility's capabilities and scope of care. The document outlines general functions, patient descriptors, and resources for basic, intermediate and intensive care obstetrical and neonatal services. The document's primary objective is to provide clear definitions of perinatal-neonatal levels of care in Washington hospitals for use by clinical providers, health administrators, and state officials whose common goals are to

- improve the outcome of pregnancy
- increase access to care for pregnant women and newborns
- optimize allocation of resources

These goals call for the document to remain conservative. Each institution is encouraged to utilize the guidelines to assess and define its own scope of care. However, the guidelines do not mandate that an individual unit must provide the entire scope of service within a Level of Care designation, nor are they meant to rigidly limit the scope of services if appropriate resources are available. In addition, it is recognized that modifications may be necessary so that both the objectives of the document and the unique goals of a hospital or region may be met. For example, it is recognized that in some rural hospitals, the average daily census of neonates will be lower than that specified in the document in order to ensure access to care.

The Perinatal Advisory Committee revised this document by consensus after studying samples solicited from other states, and by drawing from the referenced published standards of care and clinical practice guidelines cited in Appendix A. Health care providers are urged to remain informed regarding any updates/revisions of these referenced materials. In addition, input was solicited from around the state during the public review and comment period, and many of those recommendations were incorporated in the final document.

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General Functions

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Diagnosis and management of **uncomplicated pregnancies and healthy neonates ≥ 36 0/7 weeks gestation** Neonatal resuscitation per Neonatal Resuscitation Program (NRP) guidelines *(ref 1)* An established triage system for identification of complicated patients who require transport to a higher level of care facility Stabilization of unexpected maternal or neonatal problems including the ability to stabilize unexpectedly small, preterm, or sick neonates for transport Arrangements for primary care follow up for all newborns discharged per AAP guidelines *(ref 2)*	Level I functions plus: Diagnosis and management of **selected complicated pregnancies and neonates ≥ 34 0/7 weeks gestation** Care of **mildly ill neonates** with problems that are expected to resolve rapidly Management of recovering neonates who can be appropriately back-transported from a referral center Arrangement for developmental follow-up for high risk neonates	Level IIA functions plus: Diagnosis and management of **selected complicated pregnancies and neonates ≥ 32 0/7 weeks gestation** Care of **moderately ill neonates** including those who may require **nasal CPAP**	Level IIB functions plus: Diagnosis and management of **selected complicated pregnancies and neonates ≥ 26 0/7 weeks gestation** Care of **severely ill neonates** requiring **mechanical ventilation** May be a state contracted **regional perinatal center** Establishment of a **perinatal database for quality improvement and outcomes monitoring**	Level IIIA functions plus: Diagnosis and management of **all complicated pregnancies and neonates at all gestational ages** Immediate consultation from pediatric surgical subspecialists for diagnosis and **on-site treatment of acute surgical complications** of prematurity	If obstetrical services are offered, same functions as Level IIIB **Full spectrum of medical and surgical pediatric subspecialists** that may include • Neonatal open heart surgery • Neonatal ECMO • Pediatric organ transplantation
Mechanical ventilation may be provided for stabilization pending transport to a Level III facility					

Neonatal Patients: Services and Capabilities

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Neonates ≥ 36 0/7 weeks gestation Mildly ill neonates ≥ 36 0/7 weeks gestation whose transitional problems are resolving Capabilities include • Breastfeeding support per AAP and WHO guidelines *(ref 3)* • Controlled thermal environment • Neonatal cardiorespiratory monitor for use during stabilization, assessment or observation prior to transport • Neonatal pulse oximeter • Device for blood glucose screening • Gavage feeding • Device for assessing blood pressure • Hood oxygen/nasal cannula • Peripheral IV insertion for fluids, glucose, and antibiotics prior to transport	Level I patients and services plus: Neonates ≥ 34 0/7weeks gestation Mildly ill neonates whose problems are expected to resolve rapidly and without need for CPAP, assisted ventilation, or arterial catheter Neonates requiring supplemental oxygen but not > 60% after 1st 6 hrs Management of recovering neonates who can be back-transported from a referral center Capabilities include • Space designated for care of sick/ convalescing neonates • Cardiorespiratory monitor for continuous observation • Peripheral IV insertion, maintenance and monitoring for fluids, glucose, antibiotics • Neonatal blood gas monitoring Average daily census of at least one - two Level II pts.	Level IIA patients and services plus: Neonates ≥ 32 0/7 weeks gestation Moderately ill neonates at low risk for needing mechanical ventilation beyond nasal CPAP Capabilities include • Umbilical or peripheral arterial catheter insertion, maintenance and monitoring • Peripheral or central administration of total parenteral nutrition and/or medication and fluids Capability may include nasal CPAP Average daily census of at least two - four Level II patients	Level IIB patients and services plus: Infants of ≥ 26 0/7 wks gestational age Severely ill neonates at risk for or requiring mechanical ventilation Capabilities for • Prolonged mechanical ventilation Average daily census of at least 10 Level II /Level III patients	Level IIIA patients and services plus: Infants of all gestational ages Capabilities for • on-site treatment of acute surgical complications of prematurity Average daily census of at least 10 Level II /Level III patients	Level IIIB patients and services plus: Neonates who require • Full spectrum of medical and surgical pediatric subspecialty care May include capabilities for • Open heart surgery • Neonatal ECMO • Pediatric organ transplantation Average daily census of at least 10 Level II /Level III patients

Obstetrical Patients: Services and Capabilities

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Uncomplicated pregnancies ≥ 36 0/7 weeks gestation Capabilities include • continuous electronic fetal monitoring • initiate cesarean section within 30 minutes of decision to do so • Management consistent with ACOG guidelines of potentially complicated births, but with low likelihood of neonatal or maternal morbidity *(ref 4)* • Stabilization and transport for unexpected maternal problems consistent with ACOG guidelines *(ref 4)*	Level I patients and services plus: Pregnancies ≥ 34 0/7 weeks gestation Capabilities include management consistent with ACOG guidelines of selected high-risk pregnancy conditions such as *(ref 4)* • complications not requiring invasive maternal monitoring or maternal intensive care • preterm labor judged unlikely to deliver before 34 weeks gestation	Level IIA patients and services plus: Pregnancies ≥ 32 0/7 weeks gestation Capabilities include management consistent with ACOG guidelines of selected high-risk pregnancy conditions such as *(ref 4)* • preterm labor judged unlikely to deliver before 32 weeks gestation	Level IIB patients and services plus: Selected complicated pregnancies ≥ 26 0/7 weeks gestation Capabilities include • immediate cesarean delivery • maternal intensive care	Level IIIA patients and services plus: Pregnancies at all gestational ages Capabilities include • diagnosis and treatment of all perinatal problems	If obstetrical services are offered, same as Level IIIB patients and services

Patient Transport

<table>
<tr><th>Basic Care</th><th colspan="2">Intermediate Care</th><th colspan="2">Intensive Care</th><th></th></tr>
<tr><th>Level I</th><th>Level IIA</th><th>Level IIB</th><th>Level IIIA</th><th>Level IIIB</th><th>Level IIIC</th></tr>
<tr><td colspan="5">All hospitals demonstrate capabilities to stabilize and initiate transport of patients in the event of unanticipated maternal-fetal-newborn problems that require care outside the scope of the designated level of care

Transport patients:
• Who are anticipated to deliver a neonate of earlier gestational age than appropriate for the facility's designated level of care in accordance with COBRA laws (ref 5) and should not transport if the fetus or mother is unstable or delivery is imminent (ref 2)

• Whose illness or complexity requires services with a higher level of care than provided at the admitting facility

A hospital that transports patients to a higher level of care facility must:
• Demonstrate on-going relationships with referral hospital(s) for education, immediate consultation, urgent transport facilitation, and quality assurance

• Establish a written policy and procedure for maternal and neonatal transport that includes an established triage system for identifying patients at risk who should be transferred to a facility that provides the appropriate level of care

• Establish guidelines that ensure a provider's continuing responsibility for and care of the patient until transport team personnel or receiving hospital personnel assume full responsibility for the patient

A hospital that accepts maternal or neonatal transports in order to provide a higher level of care than is offered at the referral hospital, must:
• participate in perinatal and/or neonatal case reviews at the referral hospital
• collaborate with state contracted perinatal center for coordinating outreach education
• maintain a 24 hr/day system for reliable, comprehensive communication between hospitals for immediate consultation, initiation, and approval of maternal and newborn transports
• provide referring physicians with ongoing communication and recommendations for ongoing patient care at discharge</td><td>Level IIIB criteria excluding obstetrical care if not provided

Provides full spectrum of services; return transport may be necessary to make acute care beds accessible and for discharge planning closer to home</td></tr>
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Medical Director

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Obstetrics: Board- eligible or certified in OB/GYN or family medicine Nursery: Board-eligible or certified in pediatrics or family medicine If the medical director is a family medicine physician, he or she may direct both services	Obstetrics: Board-certified in OB/GYN or family medicine Nursery: Board –certified in pediatrics or family medicine	Obstetrics: Board-certified in OB/GYN Nursery: Board –certified in neonatology	Obstetrics: Board-certified in maternal-fetal medicine Nursery: Board-certified in neonatology		

Medical Providers

(Medical Providers section continued on next page)

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level III**	**Level IIIC**
Physician or credentialed obstetrical provider in-house, immediately available in late stage labor or when fetal or maternal complications are imminent or apparent Every delivery is attended by at least one person whose sole responsibility is the baby, whose Neonatal Resuscitation Program (NRP) provider status is current, and who is capable of initiating newborn resuscitation *(ref 1)* Another person is in-house and immediately available whose NRP provider status is current and who is capable of assisting with chest compressions, intubating, and administering medications *(ref 1)*	Level I coverage plus: Every **high risk** delivery is attended by at least two people *(ref 1),* one of whom is a pediatrician, family practice physician, or advanced practice nurse who is capable of a complete resuscitation, including assisting with chest compressions, intubating and administering medications	Level IIA coverage plus: Continuous in-house presence of personnel experienced in airway management and diagnosis and treatment of pneumothorax when a patient is being treated with nasal CPAP	Level IIA coverage plus: Obstetrics: Immediate availability of an obstetrician with demonstrated competence in the management of complicated labor and delivery patients Newborn: Immediate availability of neonatologist, pediatrician, or neonatal nurse practitioner with demonstrated competence in the management of severely ill neonates, including those requiring mechanical ventilation		

Medical Providers (cont'd)

Basic care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Anesthesiologist or nurse-anesthetist available to initiate cesarean section within 30 minutes of decision to do so Consultation arrangement with genetic counselor per written protocol	Level I staff plus: Radiologist on-staff with daily availability who can interpret neonatal studies such as chest and abdominal radiographs, and cranial ultrasound Ophthalmologist with pediatric experience available to do eye exams for neonates who are at high risk for retinopathy of prematurity (ROP) if accepting back transport of such infants; written protocol for referral or treatment Arrangement for neurodevelopmental follow-up or referral per written protocol		Level II staff plus: Obstetrical anesthesiologist or nurse anesthetist immediately available Pediatric echocardiography services with written protocols for pediatric cardiology consultation, including videotape interpretation Complete range of genetic diagnostic services and genetic counselor on staff; referral arrangement for geneticist and diagnostics per written protocol Arrangement for perinatal pathology services	Level IIIA staff plus: Anesthesiologist skilled in pediatric anesthesia on-call	Same as Level IIIB staff plus: Full spectrum of medical and surgical pediatric subspecialists

Nurse:Patient Ratio

Basic Care	Intermediate Care		Intensive Care		
Level I	Level IIA	Level IIB	Level IIIA	Level IIIB	Level IIIC

Staffing parameters should be clearly delineated in a policy that reflects (a) staff mix and ability levels; (b) patient census, intensity, and acuity; and (c) plans for delegation of selected, clearly defined tasks to competent assistive personnel. It is an expectation that allocation of personnel provides for safe care of all patients in a setting where census and acuity are dynamic *(ref 2)*

Intrapartum:

- 1:2 patients in labor
- 1:2 induction or augmentation of labor
- 1:1 patients in second stage labor
- 1:1 patients with medical or obstetric complications
- 1:1 coverage for initiating epidural anesthesia
- 1:1 circulation for cesarean delivery

Antepartum/postpartum

- 1:6 patients without complications
- 1:4 recently born neonates and those requiring close observation
- 1:3-4 normal mother-baby couplet care
- 1:3 antepartum/postpartum patients with complications but in stable condition
- 1:2 patients in post-op recovery

Newborns

- 1:6-8 neonates requiring only routine care*
- 1:4 recently born neonates and those requiring close observation
- 1:3-4 neonates requiring continuing care
- 1:2-3 neonates requiring intermediate care

- 1:1-2 neonates requiring intensive care
- 1:1 neonates requiring multisystem support
- 1:1 or greater unstable neonates requiring complex critical care

*Reflects traditional newborn nursery care. A nurse should be available at all times, but only one may be necessary, as most healthy neonates will not be physically present in the nursery. Direct care of neonates in the nursery may be provided by ancillary personnel under the nurse's direct supervision. Adequate staff is needed to respond to acute and emergency situations. The use of assistive personnel is not considered in the nurse: patient ratios noted here.

Nursing Management

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
*Nurse manager of perinatal services and *Nurse manager of nursery services • Maintains RN licensure • Directs perinatal and/or nursery services • Guides perinatal and/or nursery policies and procedures • Collaborates with medical staff • Consults with higher level of care units as necessary *One RN may manage both services but additional managers may be necessary based on number of births, average daily census, or number of full-time equivalents (FTEs).	Same as Level I	Same as Level I plus: • Advanced degree is desirable			

Support Providers:
Pharmacy, Nutrition/Lactation and OT/PT

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Pharmacy services Registered pharmacist immediately available for telephone consultation, 24 hrs/day and 7 days/wk Provision for 24 hr/day access to emergency drugs	Registered pharmacist available in-house, 24 hrs/day, and 7 days/wk	Registered pharmacist with experience in neonatal/perinatal pharmacology available in-house, 24 hrs/day, and 7 days/wk	Same as Level IIB		
Nutrition/Lactation: Dietary and lactation services and consultation available	One healthcare professional who is knowledgeable in • management of special maternal and neonatal dietary needs • enteral nutrition of low birthweight and other high-risk neonates. Lactation services and consultation available Diabetic educator for inpatient and outpatient services.	Same as Level IIA services plus: One healthcare professional knowledgeable in management of • parenteral nutrition of low birthweight and other high-risk neonates	At least one registered dietitian/nutritionist who has special training in perinatal nutrition and can plan diets that meet the special needs of high-risk mothers and neonates		
OT/PT Services Provide for inpatient consultation and outpatient follow-up- services					

Support Providers:
Social Services/Case Management, Respiratory Therapy, Nurse Educator/Clinical Nurse Specialist

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Social services/case management: Mechanism available for high-risk assessment and provision of social services	Level I services plus: Personnel with relevant experience whose responsibilities include perinatal patients; specific personnel for discharge planning and education, community follow-up, referral process, and home care arrangements	Level IIA services plus: At least one MSW with relevant experience whose responsibilities include perinatal patients; specific personnel for discharge planning and education, community follow-up, referral process, and home care arrangements	Level IIB services plus: At least one full-time licensed MSW (for every 30 beds) who has experience with socioeconomic and psychosocial problems of high-risk mothers and babies, available 7 days/wk and 24 hrs/day		
Nurse educator/ Clinical Nurse Specialist			A nurse educator or clinical nurse specialist with appropriate training in intensive neonatal or perinatal care to coordinate staff education and development. Those educators already in this position should be grandfathered in until post-graduate education is completed.		
Respiratory Therapy: The role of a Respiratory Therapist is prescribed by the medical director and clearly delineated per written protocol. If attending deliveries or providing neonatal respiratory care, must have current NRP Provider status	Same as Level I	Same as Level I plus: RT with documented competence and experience in the management of neonates with cardiopulmonary disease; when CPAP in use, an RT must be in-house and immediately available	Level IIB plus: 1 RT: 6 or fewer ventilated neonates with additional staff for procedures		

X-Ray/Ultrasound

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
Portable x-ray and ultrasound equipment available to Labor & Delivery and Nursery within 30 minutes Performance and interpretation of neonatal x-rays and perinatal ultrasound available 24 hrs/day Antepartum surveillance techniques available	Level I services plus: Ultrasound equipment available in the Labor and Delivery unit 24 hrs/day		Level IIB services plus: Advanced level ultrasound available to Labor & Delivery and Nursery on-site and on a daily basis		If obstetrical services are offered, same as Level IIIA/B

Laboratory and Blood Bank Services

Basic Care	Intermediate Care		Intensive Care		
Level I	**Level IIA**	**Level IIB**	**Level IIIA**	**Level IIIB**	**Level IIIC**
LABORATORY Laboratory technician available 24 hrs/day, present in the hospital or within 30 minutes Capability to report laboratory results in a timely fashion	Same as Level I plus: Lab technician in-house 24 hrs/day Personnel skilled in phlebotomy and IV placement in the newborn immediately available 24 hrs/day Microtechnique for hematocrit and blood gases within 15 minutes		Comprehensive services available 24 hrs/day		
BLOOD BANK Blood bank technician on-call and available w/in 30 minutes for performance of routine blood banking procedures Provision for emergent availability of blood and blood products					

APPENDIX A
References

1. Neonatal Resuscitation Program (NRP)

American Academy of Pediatrics and American Heart Association. 2000. *Textbook of Neonatal Resuscitation, 4th edition*. Kattwinkel J, editor. Elk Grove Village, IL: American Academy of Pediatrics.

Or

Kattwinkel J et al. 1999. An Advisory Statement from the Pediatric Working Group of the International Liaison Committee on Resuscitation. Pediatrics 103(4), e56

Or on-line at:

http://www.pediatrics.org/cgi/content/full/103/4/e56

2. Guidelines for Perinatal Care

American Academy of Pediatrics and American College of Obstetricians and Gynecologists. 1997. Guidelines for Perinatal Care, 4th edition. Hauth JC and Merenstein GB, editors. Elk Grove Village, IL: American Academy of Pediatrics.

3. Breastfeeding support

American Academy of Pediatrics Work Group on Breastfeeding.1997. Breastfeeding and the Use of Human Milk. Pediatrics 100(6): 1035-1039.

Or on-line at: http://www.aap.org/policy/re9729.html

OR

WHO/UNICEF Joint Statement. 1989. Protecting, Promoting and Supporting Breast-feeding: The special role of maternity services.

Or on-line at: http://www.who.int/dsa/cat98/nut8.htm or http://www.who.int/dsa/cat98/z10steps.htm

Or on-line at: htt://www.aboutus.com/a100/bfusa/

4. ACOG Guidelines

American College of Obstetricians and Gynecologists (ACOG)

Professional Guidelines: Committee Opinions; Educational/Practice Bulletins

On-line at: http://www.acog.com

5. COBRA Laws

American College of Emergency Physicians (ACEP). Appropriate Interhospital Patient Transfer. Policy # 400143

On-line at: http://www.acep.org/library/index.cfm/id/374.htm

APPENDIX B
Statewide Perinatal Advisory Committee (PAC)
Subcommittee on Perinatal Level of Care (LOC) Guidelines Document

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